Information Resources Related to the Recovery of Endangered and Threatened Salmonids – Puget Sound and Northwest Washington

Developed by the Pacific Salmon Information Network

December 6, 1999

Contents

Overview

On the September 14, 1999, representatives from federal, state, local, and tribal governments, non-profit organizations, private companies, and academia met to discuss the need for sharing information related to the recovery of endangered and threatened salmonids. The participants agreed to compile an inventory of information resources, which would include contacts, data sets, and needs. Larry Sugarbaker (Washington Geographic Information Council) and Mark Schaefer (U.S. Department of the Interior) agreed to develop a template and invite participants to submit information. The template and invitation are Appendix A.

This report is the result of the initial responses of the participants for contacts and data sets. The responses were supplemented through searches for web sites with related subject matter. Undoubtedly there are other sites (probably many) that can be added to the list.

Not all information requested on the template were provided or available during web searches. If information was not available, the corresponding heading was not providing in this report.

Items in the report are listed alphabetically, usually by organization.

The compilation reflects the group's geographic interest in recovery issues related to the Puget Sound area of the State of Washington. However, all information received is included, regardless of the geographic area, and so there are some sites for other areas in the country. Note that there are numerous sites, not reported here, for similar issues in other geographic areas.

Needs reported by participants are in Appendix B.

Biophysical models for the Gulf of Alaska

Host: National Oceanic and Atmospheric Administration, Office of Oceanic and Atmospheric Research, Pacific Marine Environmental Laboratory

Geographic area: Dixon Entrance to Unimak Passage

Data categories: Gridded (20 km cell) velocity, prey, and life history fields [Cray J-90 and DEC workstations]

Mandate/sponsor: Global Ocean Ecosystems Dynamics (GLOBEC) – Northeast Pacific

Contact: Dr. Al Hermann, 206.526.6495, Hermann@pmel.noaa.gov

Chehalis River Basin Habitat Degradation Database

Web address: n/a (CD-ROM)

Host: U.S. Fish and Wildlife Service

Geographic area: Chehalis River watershed in southwestern Washington

Timeframe of data: habitat surveys completed in 1992

Data categories: point and linear locations of various habitat features and degradations, and other data layers. [available in ArcView format]

Mandate/sponsor: Funded under the "Chehalis Act" of 1990 to help guide the Chehalis Fisheries Restoration Program

Contact: Mike Kelly, U.S. Fish and Wildlife Service, 360.753.9560, Mike_Kelly@fws.gov

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Clearinghouse for the Olympic Peninsula

Web address: http://cathedral.cfr.washington.edu/~chouse/

Host: Olympic Natural Resources Center

Geographic area: Olympic Peninsula

Data categories: metadata for air, climate, and meteorology; cadastre and public land survey system; demography: census and culture ; ecosystems and habitats; ecological concepts and processes; elevation and bathymetry; geodetic control; geology and soils; governmental units; hydrography; orthoimagery; recreation; species and organisms; software, tools, and models; transportation; and utilities

Mandate/sponsor: The Olympic Natural Resources Center (ONRC) Clearinghouse is a metadata archive of Olympic Peninsula geospatial and biological data for scientists, resource managers, and citizens. Brings together natural and cultural resource information reflecting the region's diverse marine and terrestrial ecology, land ownership, and land use. Developed cooperatively by the U.S. Geological Survey, Olympic Natural Reources Center, and the University of Washington.

Contact: Olympic Natural Resources Center, PO Box 1628, Forks, Washington 98331; 360.374.3220 x258, or David Peterson, USGS Forest and Rangeland Ecosystem Science Center, 206.543.1587, wild@u.washington.edu

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Cedar River Habitat Conservation Plan

Web address: http://www.ci.seattle.wa.us/util/watershed/cedar/hcp (overview of Habitat Conservation Plan effort)

Host: Seattle Public Utilities

Geographic area: Cedar River Municipal Watershed and lower Cedar River, King County

Timeframe of data: 1992 - present

Data categories: fish distribution, fish blockages, roads, hydrology, slope, aspect, elevation, land cover

Status of the resource: maintained through annual surveys and updates

Plans for new data or applications: The Watershed Management Division will implement a Habitat Conservation Plan (HCP), a 50-year, $88 million program.

Mandate/sponsor: The Habitat Conservation Plan is a contract with the Federal Government in compliance with an incidental take permit. The purpose of the Habitat Conservation Plan (HCP) is to protect and restore all species of concern that may be affected by the operations of Seattle Public Utilities and City Light in the Cedar River Watershed, while allowing the City to continue to provide high quality drinking water to the region. The HCP proposal would provide significant benefits to 83 species of fish and wildlife resources found throughout the entire Cedar River system. A significant portion will be devoted to research and development, a fish ladder at Landsburg, and a GIS/IT application and data development.

Contact: Tom Van Buren, Watershed Management Division, Seattle Public Utilities, 19901 Cedar Falls Road, North Bend, Washington 98045; 206.386.4212; 206.233.1527 (f); tom.vanburen@ci.seattle.wa.us

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Columbia River Basin, University of Washington

Resources (selected items):

Analysis tools

http://www.cqs.washington.edu/analysis.html – Models for fish passage, dissolved gas, harvest, survival, and other items.

Columbia River Data Access in Real Time (DART)

http://www.cqs.washington.edu/dart/dart.html – For the Columbia Basin dams and fish passage, for 1910 to present, provide real time data for adult passage, endangered species (NMFS ESU), daily counts by PIT tag, hatchery releases, smolt index, river environment, and headwater flows. Provide an interactive data resource designed for research and management purposes relating to the Columbia Basin salmon populations and river environment.

Mandate/sponsor: Investigate issues surrounding salmon biology in the Columbia and Snake River basins. Function as a secondary database site, providing data and tools to analyze salmon issues in Columbia Basin; as a secondary database site, add value to the data through statistical analysis and modeling activities.

Contact: Columbia Basin Research, Puget Sound Plaza, 1325 4th Avenue, Suite 1820, Seattle, Washington 98101-2509

Fish Passage Center

Web address: http://www.fpc.org/Index.htm

Data categories: Adult, smolt, river, and hatchery data

Resource: Provides current and historic data on salmon and steelhead passage in the main stem Snake and Columbia river basins. In addition to real-time access to the Smolt Monitoring Program, the FPC provides data about river conditions, hatchery releases, smolt migration, and adult returns.

Mandate/sponsor: The Fish Passage Center (FPC) and its manager interact with the hydrosystem operators and regulators in managing fish passage.

Contact: Fish Passage Center, 2501 SW First Avenue, Suite 230, Portland, Oregon 97201-4752, 503.230.4582, 503.230.7559(f)

Global Ocean Ecosystems Dynamics (GLOBEC) – Northeast Pacific

Web address: http://www-powelllab.biol.berkeley.edu/nep/index.html

Host: Department of Integrative Biology, University of California, Berkeley

Geographic area: California Current and Gulf of Alaska

Timeframe of data: 1998-2004?

Mandate/sponsor: To understand the effects of climate variability and climate change on the distribution, abundance and production of marine animals (including commercially important living marine resources) in the eastern North Pacific. To embody this understanding in diagnostic and prognostic ecosystem models, capable of capturing the ecosystem response to major climatic fluctuations. National Oceanic and Atmospheric Administration, National Ocean Service, Coastal Ocean Program and the National Science Foundation

Contact: Beth Turner, 301.713.3338 ext. 135, Elizabeth.turner@noaa.gov

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Island County Maps Online

Web address: http://www.islandcounty.net/publicworks/default.htm

Host: Island County Public Works

Geographic area: Island County, Washington

Data categories: aerial photos, and land use and zoning maps

Timeframe of data: September 1997 (aerial photos)

Contact: Island County Public Works, P.O. Box 5000, Coupeville, Washington 98239-5000, 360.678.5111

Jefferson County Integrated Data Management System (IDMS)

Web address: http://www.co.jefferson.wa.us/idms/default.htm

Host: Jefferson County, Washington

Geographic area: Jefferson County, Washington

Data categories: Parcel information; maps of salmonid distribution, jurisdictions, hazards, habitat, and wetlands.

Mandate/sponsor: The primary mission of the IDMS is to develop and implement an effective countywide Geographic Information System (GIS) for use by Jefferson County staff.

King County GIS Center

Web address: http://www.metrokc.gov/dias/its/gis/

Host: King County, Washington

Geographic area: King County, Washington

Resources (selected):

Map Portal

http://www.metrokc.gov/dias/its/gis/sdw/frontend.htm - Provides a way to access information relevant to a specific business function within a spatial context.

Spatial Data Catalog

http://www.metrokc.gov/dias/its/gis/sdc/ - Descriptions of the county's data holdings.

Mandate/sponsor: The KCGIS Center provides efficient, high quality GIS leadership, coordination, infrastructure, and services to meet the business needs of its customers and clients within King County and the communities it serves.

Kitsap Salmon Forum

Web address: http://www.wa.gov/kitsap/county/salmon/index.html

Host: Kitsap County Commissioners

Geographic area: Kitsap County, Washington

Resources: Meeting agendas, reports, and options for salmon recovery.

Mandate/sponsor: Kitsap County Commissioners

Motorized boat launches

Web address: http://boat.iac.wa.gov/; http://www.wa.gov/iac/boating.html for GIS data

Host: Washington State Interagency Committee For Outdoor Recreation

Geographic area: Washington State

Timeframe of data: December 1997

Data categories: motorized boat launches, boat ramps

Status of the resource: complete

Plans for new data or applications: updated as needed

Mandate/sponsor: The Motorized Boat Launch spatial dataset was developed to provide the most current information about motorized boat launches around Washington State to the public, state and local agencies, and boating interest groups. The information will be useful for recreation and recreation planning purposes, as well as to supplement other complementary geographic data for display and report purposes.

Contact: Jim Eychaner, Washington State Interagency Committee For Outdoor Recreation, PO Box 40917, Olympia, Washington 98504-0917, 360.902.3011; 360.902.3026(f); JimE@iac.wa.gov

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National Marine Fisheries Service

Web address: http://www.nmfs.gov/

Host: National Marine Fisheries Service (NMFS)

Resources (selected):

Northwest Fisheries Science Center

http://research.nwfsc.noaa.gov/nwfsc-homepage.html - provides scientific and technical support for the management, conservation, and development of the Pacific Northwest region's anadromous and marine fishery resources.

Age studies of salmon

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Resource Enhancement and Utilization Technologies Division

Geographic area: Puget Sound

Data categories: Washington State Fish and Wildlife Service salmon hatcheries scale data [MS ACCESS (PC)]

Contact: Stephen Riley, 206.860.3458, Stephen.riley@noaa.gov

Air/Ocean data from NOAA moored buoys

Web address: http://www.pfeg.noaa.gov/data_gate/pfeg_data_avenue.html

Host: National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Pacific Fisheries Environmental Laboratory

Geographic area: 22 different NOAA NDBC moored buoys from the Gulf of Alaska to southern California

Timeframe of data: 1980 to present

Data categories: Processed files for easy access to air temperature, sea temperature, surface atmospheric pressure, wind speed, and wind direction. [Available as ASCII file or GIF image or spreadsheet].

Mandate/sponsor: Magnuson Fishery Conservation and Management Act

Contact: Roy Mendelssohn, 831.648.9029, rmendels@pfeg.noaa.gov

Air/Ocean flow index

Web address: http://www.pfeg.noaa.gov/data_gate/pfeg_data_avenue.html

Host: National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Pacific Fisheries Environmental Laboratory

Geographic area: West coast of North America 60N 149W to 21N 107W.

Timeframe of data: Monthly indices, 1946 to date. Daily and six-hourly, 1967 to date.

Data categories: Surface pressure, wind components, wind stress, wind speed cubed, Ekman transport, etc. [Available as ASCII file or GIF image or spreadsheet].

Mandate/sponsor: Magnuson Fishery Conservation and Management Act

Contact: Roy Mendelssohn, 831.648.9029, rmendels@pfeg.noaa.gov

Alsea River (Oregon) basin life-cycle modeling

Web address: http://www.nwfsc.noaa.gov/fram/sat/research.htm

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Fishery Resource Analysis and Monitoring Division, Salmon Analysis Team

Geographic area: Coastal Oregon and Puget Sound watersheds.

Data categories: Using data from the USFS Coastal Landscape and Modeling Study (CLAMS: www.fsl.orst.edu/clams), including vegetation cover (1990-99), land ownership, and 10-meter digital elevation models. Oregon Department of Fish and Wildlife Coho salmon production data (1950-99), including spawner surveys, fish distribution, juvenile density, instream habitat surveys. [PC, Sun Solaris, EXCEL, Access, ArcInfo, ArcView, Perl, Python, C++, Linux]

Mandate/sponsor: Endangered Species Act, SFA, PSC

Contact: Pete Lawson, 541.867.0430, Peter.lawson@noaa.gov; Mindy Rowse, 206.860.6783, Mindy.rowse@noaa.gov

Baseline Environmental Monitoring Program

Web address: http://bemdata.nwfsc.noaa.gov/baseline/intro.html

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Fish Ecology Division

Geographic area: Streams in the Salmon River basin

Data categories: Water quality parameters (temperature, dissolved oxygen, conductivity, etc.) with statistical analysis and data charting capabilities [MS Access, Perl Scripts, Website, GnuPlot (PC)]

Mandate/sponsor: Bonneville Power Authority

Contact: Brad Eppard, 509.547.7518, Brad.Eppard@noaa.gov

Coho and Chinook salmon fitness in the estuarine environment

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Environmental Conservation Division

Geographic area: 12 estuaries in Oregon and Washington

Timeframe of data: 1996-present

Data categories: habitat quality measures, salmon infection, and disease status [EXCEL, Filemaker Pro, MAC (will be MS Access)]

Mandate/sponsor: Endangered Species Act

Contact: Mary Arkoosh, 541.867.0327, Mary.arkoosh@noaa.gov, or Beth Horness, 206.860.3311, Beth.horness@noaa.gov

Comprehensive Ocean-Atmosphere Data Set on CD-ROM (COADS)

Web address: http://www.pfeg.noaa.gov/pfeg_history_and_goals/coads.html

Host: National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Pacific Fisheries Environmental Laboratory

Geographic area: Worldwide

Timeframe of data: 1854-1990

Data categories: Improved access to time series at locations for marine surface observations including sea surface temperature, wind speed and direction, atmospheric pressure, and cloud cover. [ASCII or netCDF files or CODE program available on request]

Plans for new data or applications: Update planned for 1980-1992

Mandate/sponsor: Magnuson Fishery Conservation and Management Act

Contact: Roy Mendelssohn, 831.648.9029, rmendels@pfeg.noaa.gov

Damage assessment salmon studies

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Environmental Conservation Division

Geographic area: Pacific Northwest

Data categories: Toxicological tests of marine resources [EXCEL, Macintosh]

Mandate/sponsor: Superfund sites

Contact: Jim Meador, 206.860.3321, James.meador@noaa.gov

Environmental Data for Fisheries Systems (FATE 2000)

Host: National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Pacific Fisheries Environmental Laboratory

Data categories: Will provide indicators of ecological and oceanographic change at the population and ecosystem level, from local to ocean-basin scales.

Status of the resource: To be developed

Mandate/sponsor: FATE 2000 initiative

Contact: Roy Mendelssohn, 831.648.9029, rmendels@pfeg.noaa.gov

Fine Sediment Intrusion and Scour Study

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Environmental Conservation Division

Geographic area: Skagit, Snohomish, and Stillaguamish basins

Data categories: fine sediment intrusion rates and scour depths for Chinook spawning gravel [EXCEL (PC)]

Mandate/sponsor: Environmental Protection Agency (Clean Water Act) and the Endangered Species Act

Contact: George Pess, 206.860.3450, George.pess@noaa.gov

Flow level relationship to Chinook egg/fry survival

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Environmental Conservation Division

Geographic area: Stillaguamish and Skagit

Timeframe of data: 1928-1999 (varies)

Data categories: existing USGS flow data (1928-1999) and Washington Department of Fish and Wildlife chinook escapement data (1950-1999) [EXCEL (PC)]

Contact: George Pess, 206.860.3450, George.pess@noaa.gov

Freshwater habitat and fish populations

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Environmental Conservation Division

Geographic area: Salmon River, Idaho; Snohomish River, Washington; Willamette River, Oregon

Timeframe of data: Various

Data categories: Coho escapement data, Chinook Redd counts; GIS data include geology, terrain, climate, vegetation, road, mining, etc., in scale varying from 1:12,000 to 1:2 million [ArcInfo, ArcView, MapInfo, GRASS (PC)]

Mandate/sponsor: Endangered Species Act

Contact: George Pess, 206.860.3450, George.pess@noaa.gov, Blake Feist, 206.860.3408, Blake.feist@noaa.gov

Mixed Layer Depth from World Ocean Database (MLD from WOA98)

Web address: http://www.pfeg.noaa.gov

Host: National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Pacific Fisheries Environmental Laboratory

Geographic area: worldwide oceans

Timeframe of data: 1945-1994

Data categories: Monthly mixed layer depth and mixed layer depth climatology [Available as ASCII file or GIF image or spreadsheet].

Plans for new data or applications: Plan to allow users to select their own criteria.

Mandate/sponsor: Magnuson Fishery Conservation and Management Act, SFA

Contact: Roy Mendelssohn, 831.648.9029, rmendels@pfeg.noaa.gov

Northern Oscillation Index (NOIx)

Web address: http://www.pfeg.noaa.gov/data_gate/pfeg_data_avenue.html (available soon)

Host: National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Pacific Fisheries Environmental Laboratory

Data categories: Index of changes specific to the North Pacific system similar to Southern Oscillation Index. [Available as ASCII file or GIF image or spreadsheet].

Plans for new data or applications: Soon to be available on web site.

Mandate/sponsor: Magnuson Fishery Conservation and Management Act, SFA

Contact: Roy Mendelssohn, 831.648.9029, rmendels@pfeg.noaa.gov

Radio telemetry research studies

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Fish Ecology Division

Geographic area: Snake and Columbia River hydropower system

Data categories: Migrational behavior, survival, and timing of migrating juvenile and adult salmonids through the Snake and Columbia River hydropower system. [MS Access, Visual Basic and C++ programming languages]

Mandate/sponsor: Bonneville Power Authority, U.S. Army Corps of Engineers

Contact: Brad Eppard, 509.547.7518, Brad.Eppard@noaa.gov

Spawner surveys

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Resource Enhancement and Utilization Technologies Division

Geographic area: Puget Sound

Data categories: Counts of spawning fish using Washington State Fish and Wildlife Service data [MS ACCESS (PC)]

Contact: Stephen Riley, 206.860.3458, Stephen.riley@noaa.gov

Thermal regimes and Chinook holding habitat

Host: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center, Environmental Conservation Division

Geographic area: Upper reaches Stillaguamish

Timeframe of data: 1995-1999 (varies)

Data categories: temperature, fish counts, habitat [EXCEL and ACCESS (PC)]

Mandate/sponsor: EPA research initiative

Contact: George Pess, 206.860.3450, George.pess@noaa.gov

Upwelling index

Web address: http://www.pfeg.noaa.gov/products/upwell.html

Host: National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Pacific Fisheries Environmental Laboratory

Geographic area: 15 locations along the west coast of North America from 60N 149W to 21N 107W

Timeframe of data: Monthly indices, 1946 to date. Daily and six-hourly indices, 1967 to date.

Data categories: Index measures coastal ocean upwelling of nutrient rich water [Available as ASCII file or GIF image or spreadsheet].

Mandate/sponsor: Magnuson Fishery Conservation and Management Act

Contact: Roy Mendelssohn, 831.648.9029, rmendels@pfeg.noaa.gov

Mandate/sponsor: Provides services and products to support domestic and international fisheries management operations, fisheries development, trade and industry assistance activities, enforcement, protected species and habitat conservation operations, and the scientific and technical aspects of NOAA's marine fisheries program.

Northwest Indian Fisheries Commission

Web address: http://www.nwifc.wa.gov

Host: Northwest Indian Fisheries Commission (NWIFC)

Geographic area: northwestern Washington

Resources (selected):

Coded-Wire Tag Retrieval and Analysis System (CRAS)

http://www.nwifc.wa.gov/cras/ - Facilitate the access and analysis of coastwide salmon release and recovery information. CRAS was last updated June 1998. It contains information on salmon released between 1958 and 1997 by all agencies in Alaska, British Columbia, Washington, Oregon, Idaho and California. Coded-wire-tag (CWT) recovery information for chinook and coho salmon from the early 1970's to 1997 is also available.

Salmon and Steelhead Habitat Inventory and Assessment Project (SSHIAP)

http://www.nwifc.wa.gov/sshiap/ - Implementation of SSHIAP is a necessary component for the overall Wild Salmon Restoration Initiative. Identification and evaluation of the status of salmon and steelhead stocks (SASSI) is inadequate without assessing the quality and quantity of their habitat. SSHIAP will develop a blueprint for joint tribal/state cooperative action to document current habitat conditions, assess the role of habitat degradation and loss in the status of salmon and steelhead stocks, develop stock- or watershed/basin specific strategies for habitat protection and restoration, and prepare a cooperative strategy to obtain funding to implement the habitat restoration/protection strategies. The Northwest Indian Fisheries Commission in cooperation with the Washington State Department of Fish and Wildlife and many other state and federal agencies, timber companies, and other private groups conducts SSHIAP.

Timber-Fish-Wildlife (TFW) Monitoring

http://www.nwifc.wa.gov/TFW/ - a cooperative, inter-agency monitoring effort initiated in 1989 to fill the need for monitoring information in the TFW process. It focuses on assessing and monitoring channel and salmonid habitat conditions in streams on state and private forest land in Washington State, and evaluating the effectiveness of forest practices in meeting habitat and water quality goals.

Mandate/sponsor: Assists treaty Indian tribes in conducting biologically-sound fisheries and providing a unified tribal voice on fisheries management issues.

Contact: Northwest Indian Fisheries Commission, 6730 Martin Way East, Olympia, Washington 98516-5540; 360.438.1180; 360.753.8659(f)

Northwest Power Planning Council

Web address: http://www.nwppc.org/welcome.htm

Resources: Large number of reports on fish and wildlife, and power, projects and issues.

Mandate/sponsor: An agency the States of Idaho, Montana, Oregon and Washington, created by federal law, the council conducts long-range energy and fish and wildlife planning.

Contact: Northwest Power Planning Council, 851 SW Sixth Avenue Suite 1100, Portland, Oregon 97204 , 503.222.5161 or 800.452.5161, 503.820.2370(f), comments@nwppc.org

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Olympic National Forest

Web address: http://www.fs.fed.us/r6/olympic/

Host: U.S. Forest Service

Geographic area: Olympic National Forest

Resources: Metadata about spatial and biologic data is provided through the Clearinghouse for the Olympic Peninsula. Access to metdata from the Forest Service is available through http://cathedral.cfr.washington.edu/~chouse/metadata/list.html#o

Contact: Olympic National Forest, Forest Headquarters, 1835 Black Lake Boulevard SW, Olympia, Washington 98512-5623; 360.956.2400

Olympic National Park

Web address: http://www.nps.gov/olym/home.htm

Host: National Park Service

Geographic area: Olympic National Park

Resources (selected):

Park Planning Documents

http://www.nps.gov/olym/curman.htm – Provides access to records of decision, environmental assessments and impact statements, alternatives, and feasibility studies.

Mandate/sponsor: Parkwide management objectives are resource stewardship and protection, access and enjoyment, education and interpretation, proactive leadership, science and research, and professionalism.

Contact: Olympic National Park, 600 East Park Avenue, Port Angeles, Washington 98362

Oregon Plan

Web address: http://www.oregon-plan.org/

Mandate/sponsor: The undertaking of the State of Oregon to restore the state's salmon and trout resources. The goal is to restore populations and fisheries to productive and sustainable levels that will provide substantial environmental, cultural, and economic benefits.

Contact: Louise Solliday, Governor’s Office for Natural Resources

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Pacific Northwest Coastal Ecosystem Regional Study (PNCERS)

Web address: http://seagrant.orst.edu/~pncers/

Host: Oregon Coastal Management Program, Washington Sea Grant Program, and the National Marine Fisheries Service

Geographic area: Five coastal estuaries – Gray’s Harbor, Washington; Willapa Bay, Tillamook Bay, Yaquina Bay, and Coos Bay, Oregon

Timeframe of data: 1997-2001

Data categories: Focus on physical conditions, human use changes, biologic indicators, ecosystem management strategies

Mandate/sponsor: National Oceanic and Atmospheric Administration, National Ocean Service, Coastal Ocean Program

Contact: Sue Banahan, 301.713.3338 ext.115, Susan.banahan@noaa.gov

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Pacific States Marine Fisheries Commission (PSMFC)

Web address: http://www.psmfc.org/

Resources (selected): http://www.psmfc.org/projects.html

Alaska Fisheries Information Network (AKFIN)

http://www.psmfc.org/akfin/index.html - Provides commercial fishery information for Alaska

Pacific Fisheries Information Network (PacFIN)

http://www.psmfc.org/pacfin/index.html - Provides commercial fishery information for Washington, Oregon, and California

Economic Fisheries Information Network (EFIN)

http://www.psmfc.org/efin/index.html - Contains data series, publications, and surveys of interest to fisheries economists

Recreational Fisheries Information Network (RecFIN)

http://www.psmfc.org/recfin/index.html - Provides sport fishery information for Washington, Oregon, and California

Regional Mark Information System (RMIS)

http://www.psmfc.org/rmpc/index.html - Contains coded-wire tag information for Alaska, Washington, Oregon, California, and British Columbia

PIT Tag Information System (PTAGIS)

http://www.psmfc.org/pittag/ - Contains PIT Tag information for the Columbia Basin

Northwest Aquatic Information Network (StreamNet)

http://www.streamnet.org/index.html - Contains fish and habitat data for Washington, Oregon, Idaho, and Montana

Habitat Education Program (Habitat)

http://www.psmfc.org/habitat/index.html - Contains educational information about fish and fish habitat

Essential Fish Habitat (EFH)

http://www.psmfc.org/efh.html - Contains information relating to essential fish habitat language and legislation

Mandate/sponsor: Authorized by Congress in 1947, the Pacific States Marine Fisheries (PSMFC) is one of three interstate commissions dedicated to resolving fishery issues. Representing California, Oregon, Washington, Idaho, and Alaska, the PSMFC does not have regulatory or management authority; rather it serves as a forum for discussion, and works for coastwide consensus to state and federal authorities. PSMFC addresses issues that fall outside state or regional management council jurisdiction. The goal is to promote and support policies and actions

directed at the conservation, development and management of fishery resources of mutual concern to member states through a coordinated regional approach to research, monitoring and utilization.

Contact: Pacific States Marine Fisheries Commission, 45 SE 82nd Avenue, Suite 100, Gladstone, Oregon 97027-2522; 503.650.5400; 503.650.5426(f)

Pierce County "Map Your Way"

Web address: http://triton.co.pierce.wa.us/

Host: Pierce County, Washington

Geographic area: Pierce County, Washington

Timeframe of data: Varies

Data categories: (major categories) applications, environmental, hydro/topographic, parcels, places of interest, planimetric/ortho, political, roads/rails, service areas, survey, utilities

Mandate/sponsor: The Planning and Land Services Department implements the laws adopted by the Pierce County, Washington State, and Federal legislatures related to land use and development. The outcome will be a predictable process for land use decisions, providing support and suggestions for changes to outdated regulations, consistency of reviews, uniformity of enforcement, and streamline of the process.

Contact: Pierce County Planning and Land Services, 2401 South 35th Street, Tacoma, Washington, 253.798.7210

PRoject Information SysteM (PRISM) (Interagency Committee for Outdoor Recreation)

Web address: May be accessed over the web, but requires a CD-ROM from Interagency Committee for Outdoor Recreation (IAC) to do so.

Host: IAC and Salmon Recovery Funding Board (SRFB)

Geographic area: Washington State

Timeframe of data: 1965-Current

Data categories: Information on all projects (planned, in progress, and complete).that have received grants from IAC, and some from Washington Department of Fish and Wildlife, and the Governor's Salmon Recovery Office.

Status of the resource: The system is currently functioning and is being upgraded continuously.

Plans for new data or applications: Will track all projects funded by the Salmon Recovery Funding Board. Will have some limited monitoring data on each project and will have geographic coordinates and information about stream segments, water body, etc., which will allow it to tie the project to a specific watershed or river system. Will also track projects funded by a few other agency grant programs.

Mandate/sponsor: Legislative mandate that IAC and the SRFB track, and be accountable for, salmon recovery funding.

Contact: Debra Wilhelmi, Assistant Director, Salmon Recovery Funding Board, 1111 Washington Street SE, P.O. Box 40917. Olympia, Washington 98504-0917. 360.902.3005, Debraw@iac.wa.gov

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Puget Sound On-line

Web address: http://www.wa.gov/puget_sound/

Host: Puget Sound Water Quality Action Team

Geographic area: Puget Sound, including surrounding counties

Resources (selected):

County information

http://www.wa.gov/puget_sound/protectps/combomap.html – Provides links online sites related to counties around the Sound.

Puget Sound Ambient Monitoring Program (PSAMP)

http://www.wa.gov/puget_sound/protectps/psamp.html – Through PSAMP studies, data on marine and fresh waters, fish, sediments, and shellfish in Puget Sound have been collected since 1989; surveys of nearshore habitat have been conducted since 1991; marine bird populations have been surveyed since 1992; and marine bird contamination has been studied since 1995. Recently released the CD “Intertidal Vegetation and Shoreline Characteristics Inventory of Skagit County and northern Whidbey Island”; also has produce an inventory for Whatcom County (available from the Aquatic Resources Division of the Washington Department of Natural Resources).

Mandate/sponsor: The Puget Sound Water Quality Action Team, a sub-agency of the Governor's Office, brings together the heads of ten state agencies, a city and a county representative, a representative of federally recognized tribes and ex-officio non-voting representatives of three federal agencies to lead and coordinate efforts to protect Puget Sound.

Contact: Puget Sound Water Quality Action Team Staff, P.O. Box 40900, Olympia, Washington 98504-0900, 360.407.7300 or 800-54-SOUND, 360.407.7333(f)

Puget Sound Regional Synthesis Model (PRISM) (University of Washington)

Web address: http://www.prism.washington.edu

Host: University of Washington

Geographic area: Puget Sound basin (all lands draining into the sound, and the sea floor)

Timeframe of data: Primary emphasis: current conditions. Outlook: dynamic scenario generation, from hours to decades in the future. History: reconstruct past conditions.

Data categories: Dynamic physical template of processes affecting how water moves across the landscape and in the Puget Sound, with attendent biological resources, from plankton to salmon. For salmon, the emphasis is on developing mechanistic, process-level understanding of why what stocks are where, and how that distribution might change with different decisions. For more information about models and data, see http://www.prism.washington.edu/vps/modsdata/modslg.html

Status of the resource: In rapid development.

Plans for new data or applications: Work with multiple groups to bring together information sets and understanding to build more integrative models.

Mandate/sponsor: University of Washington "University Initiatives Fund" (UIF) project and associated funding sources

Contact: Linda Maxson, Office of Marine Environmental and Resource Programs (Washington Sea Grant), 206.685.8302, lmaxson@u.washington.edu

Salmon Information Center (Tri-County Endangered Species Act Response)

Web address: http://www.salmon.gen.wa.us/

Host: The Seattle Aquarium

Geographic area: King, Pierce, and Snohomish Counties, Washington

Resources: General (public) information about salmon, ESA, public meetings, participation, and tri-county recovery activities. Links to counties' recovery web sites.

Mandate/sponsor: The Salmon Information Center provides a credible, neutral, comprehensive source of information to empower the public (citizens, businesses and other stakeholders) to become engaged in salmon recovery. The Salmon Information Center strives to provide up-to-date information that represents the rich diversity of perspectives found in regional discussions about salmon recovery.

Contact: Rob Bingham, The Seattle Aquarium, 877-SALMON-9, rob.bingham@ci.seattle.wa.us

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Salmon and Trout Topics (King County)

Web address: http://splash.metrokc.gov/topics/salmon/SALtopic.htm

Host: King County Department of Natural Resources

Geographic area: King County, Washington

Resources: Extensive links to issues, activities, meetings, and data.

Contact: King County Department of Natural Resources, 201 South Jackson Street, Suite 700, Seattle, Washington 98104, 206.296.6500

Salmon Recovery Funding Board

Web address: http://www.wa.gov/iac/salmonmain.html

Host: Salmon Recovery Funding Board

Geographic area: Washington State

Resources: Links to documents, contacts, legislation, and grant programs related to the board's activities.

Mandate/sponsor: Guide spending of funds targeted for recovery activities and projects.

Contact: Salmon Recovery Funding Board, 1111 Washington Street SE, P.O. Box 40917, Olympia, Washington 98504-0917, 360.902.2636, Salmon@iac.wa.gov

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Salmon Recovery Home Page (Washington State)

Web address: http://www.governor.wa.gov/esa/

Host: Washington Office of Financial Management

Geographic area: Washington State

Resources: Official state site for salmon recovery; provides links to a variety of policy, project, and science sites.

Smith River, California estuary salmon habitat studies

Host: Humboldt State University, Department of Fisheries (Arcata, California)

Geographic area: Smith River, California

Timeframe of data: 1998-2001

Data categories: Habitat usage by juvenile salmon and trout, estuarine residence time, forage base/feeding habits, historical estuary changes.

Mandate/sponsor: California Sea Grant

Contact: Tim Mulligan, 707.826.3684, Tjm2@axe.humboldt.edu

Snohomish County GIS Program

Web address: http://www.co.snohomish.wa.us/gis/

Host: Snohomish County, Washington

Geographic area: Snohomish County, Washington

Timeframe of data: 1996 to present (varies with data layer)

Data categories: county boundary, coastline, and public land survey system (plss) reference grid; county hydrography; Growth Management Act (GMA) comprehensive plan (general policy plan); generalized (PUD) parcels; integrated land records; NIES color digital orthophotos (1996); political and administrative districts; public service buildings and facilities; street centerlines / CRIS roadlog and milepost route system / TPI bus route system; street centerline / CRIS roadlog atlas annotation

Status of the resource: complete

Plans for new data or applications: In January 1998, the county council authorized the first phase of the creation of a higher accuracy database using 1:2400-scale or better data. New applications are underway in the areas of ESA response, county transportation, GMA buildable lands, and GIS web applications and database administration.

Mandate/sponsor: Provides administrative and technical support to public agencies and departments within Snohomish County in the development, sharing and effective use of a county-wide Geographic Information System (GIS).

Contact: Snohomish County GIS Program, 3000 Rockefeller, MS 709, Everett, Washington 98201, 425.388.3911

Statewide Washington Watershed Management (SWWM) Planning System

Host: Battelle Pacific Northwest Division

Geographic area: Washington State

Data categories: (examples) sponsor, project name and type, location, goals, schedule and completion status, funding level, contacts, initial and future assessments against indicators

Status of the resource: Proposed

Mandate/sponsor: Successful outcome to salmon recovery requires better ways of coordinating many related activities throughout the State.

Contact: Michael Baechler, Battelle Pacific Northwest Division, Portland, Oregon, 503.417.7553, or Brian Boyle, Battelle Pacific Northwest Division, Seattle, Washington, 206.528.3230

"Status of Chinook Salmon and Their Habitat in Puget Sound"

Web address: http://www.spcramer.com/puget.htm

Host: S.P. Cramer and Associates, Inc.

Geographic area: Puget Sound

Resource: A June 1999 synthesis of available data from tribal, state, and federal agencies in Puget Sound regarding chinook distribution and life history, chinook abundance trends, harvest impacts, hatchery production and impacts, types of impacts from water and land development, and synthesis or driving factors.

Mandate/sponsor: Commissioned by the Coalition of Puget Sound Businesses to develop and independent scientific assessment and report on the status of Puget Sound chinook salmon and their habitat.

Contact: S.P. Cramer & Associates, Inc., 300 S.E. Arrow Creek Lane, Gresham, Oregon 97080, 503.669.0133, 503.669.3437(f), spcramer@teleport.com

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Thurston Geodata Center

Web address: http://www.crab.wa.gov/thurston/geodata/default.htm

Host: Thurston County, Washington

Geographic area: Thurston County, Washington

Data categories: (major categories) base map, jurisdictions, aerial photography, emergency management, natural resources, and flooding.

Plans for new data or applications: (as of April 1998) addressed road centerline, shoreline management areas, wetlands, contours, updated aerial photography, and water bodies.

Mandate/sponsor: The purpose of the Thurston GeoData Center is to provide Thurston County staff with accurate spatial geographic information and provide access and support in utilizing information in their daily operations. Secondarily, The center provides support and services to Federal, State, and local agencies, private businesses and the general public.

Contact: Thurston GeoData Center, 921 Lakeridge Drive SW, Olympia, Washington, 360.754.4594, maps@gis.co.thurston.wa.us

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U.S. Environmental Protection Agency

Web address: http://www.epa.gov/

Host: U.S. Environmental Protection Agency (EPA)

Resources (selected):

Access to Data and Models (national site)

http://www.epa.gov/epahome/Data.html – A national site that provides access to a number of EPA's data programs.

Envirofacts

http://www.epa.gov/enviro/index_java.html - A national information system that provides a single point of access to data extracted from major EPA databases on air, chemicals, facility information, grants/funding, hazardous waste, risk management plans, Superfund, toxic releases, and water permits, drinking water, drinking water contaminant occurrence, and drinking water microbial and disinfection byproduct information (Information Collection Rule [ICR]).

Environmental Information Management System

http://www.epa.gov/eims/eims.html - Access to descriptive information (metadata) for data sets, databases, documents, models, projects, and spatial data.

Geographic Information Systems Tools

http://www.epa.gov/epahome/gis.htm – Information about systems and software used to support mapping of environmental data.

Geospatial Data Clearinghouse

http://nsdi.epa.gov/nsdi/ - provides a pathway to find information about geospatial data available from the EPA, and access to spatial datasets, and the Maps on Demand feature of Envirofacts.

Pacific Northwest Ecosystem Research Consortium (PNW-ERC) and the Willamette Restoration Initiative

http://www.orst.edu/dept/pnw-erc/ - A joint research program between regional research programs and USEPA to create a core research program and conceptual framework for ecosystem management research in the Pacific Northwest, conduct research on specific technical issues in the region, and develop technical tools to support management at multiple spatial scales. Current work includes developing scenarios for the Willamette River Basin. The site for the Willamette Restoration Initiative (http://www.oregonwri.org/) shows how this work would be applied.

Rapid Access Information System (RAINS)

In development, RAINS will provide fast, easy, flexible access to the Region's stores of environmental, programmatic, and administrative data and information. RAINS will allow users to approach and interact with this information in an integrated, multi-dimensional context. This information-based tool would be used to examine status and trends in the environment, analyze the character of environmental problems, evaluate program efficacy, target Regional programs and initiatives, and configure strategic directions. Users would include managers, program, policy, and technical specialists, and the general public. Contacts: Jon Schweiss, Manager, Office of Environmental Assessment (OEA), Data Management and Analysis Program (DMAP), 206.553.1690, schweiss.jon@epa.gov, or Don Matheny, OEA/DMAP, 206.553.2599.

Region 10 Data Management and Analysis Program

http://www.epa.gov/r10earth/offices/oea/dmap.htm – Provides links to the "Make a Map" utility, Region 10 GIS map library, environmental data library, and Environmental Information Management System, and links to EPA's national programs.

STORET (STOrage and RETrieval)

http://www.epa.gov/owow/storet/ - A repository for water quality, biological, and physical data and is used by state environmental agencies, EPA and other federal agencies, universities, private citizens, and many others. Data available since 1970 (at least). Contact: James Hileman, U.S. Environmental Protection Agency, MS OEA-095, 1200 Sixth Avenue, Seattle, Washington 98101, 206.553.1640

Surf Your Watershed

http://www.epa.gov/surf/ - A service to help locate, use, and share environmental information on watersheds or communities.

Mandate/sponsor: To protect human health and to safeguard the natural environment— air, water, and land—upon which life depends.

U.S. Geological Survey Data Clearinghouses

Web address: http://nsdi.usgs.gov/ (geospatial data) and http://www.nbii.gov/index.html (biological data)

Host: U.S. Geological Survey (USGS)

Geographic area: nationwide

Timeframe of data: varies

Data categories: biologic, geographic, geologic, hydrologic, mapping, and remotely sensed data

Status of the resource: The USGS Geospatial Data Clearinghouse provides a pathway to find information about geospatial (spatially referenced) data available from the USGS. The Clearinghouse is subdivided into information about biological resources, geologic, water resources, and national mapping. It covers the U.S. and its territories, and includes current and historical information. The Clearinghouse holdings can be searched by keyword, or by latitude and longitude boundaries. The National Biological Information Infrastructure is an electronic gateway to biological data and information maintained by federal, state, and local government agencies; private sector organizations; and other partners around the nation and the world.

Mandate/sponsor: USGS develops, maintains, and distributes earth science information under its organic act, subsequent legislation, and its appropriations.

Contact: For the USGS Geospatial Data Clearinghouse, contact nsdi@nsdi.usgs.gov. For the National Biological Information Infrastructure, contact 703.648.4205 or nbii@nbii.gov.

U.S. Geological Survey

Web address: http://www.usgs.gov/

Host: U.S. Geological Survey (USGS)

Resources (selected):

Washington State Water Resources Office

http://wa.water.usgs.gov/ - provides information on Washington's water resources for the overall benefit of the State and the Nation. Activities include collection of hydrologic data, water-resources investigations and assessments, basic and problem-oriented hydrologic research, acquisition of information useful in predicting and delineating water-related natural hazards, and scientific and technical assistance in hydrologic studies. Contact: U.S. Geological Survey, Water Resources Division, 1201 Pacific Avenue, Suite 600, Tacoma, Washington 98402, 253.428.3600 (Information Officer: 253.428.3600 x2653)

Western Fisheries Research Center

http://biology.usgs.gov/wfrc/ - Provides research findings to managers of fish and aquatic resources in the west. Primary emphases are fish health, fish ecology, and aquatic ecosystems. Contact: U.S. Geological Survey, Western Fisheries Research Center, 6505 NE 65th Street, Seattle, Washington 98115, 206.526.6282

Decision Support System for John Day Reservoir

http://biology.usgs.gov/wfrc/jddss.htm - Geographic information system (GIS)-based decision support tools to assist managers with making decisions regarding the natural resources in and around the John Day Reservoir.

Geologic activities

http://geology.wr.usgs.gov/docs/stateinfo/WA.html – Describes current geologic data collection, mapping, and research in the State.

Habitat assessment tools

The USGS Water Resources Division has used innovative techniques to assess stream habitat on several rivers. For the Elwha River, GIS applications were used to predict accessible stream reaches based on gradients; a report is available on this work. On the Yakima River, similar GIS methods were used to predict algae and fish community conditions, and on the Cedar River several biological indicators were identified and evaluated. These latter two efforts are in progress. Contact: Bob Black, rwblack@usgs.gov, 253.428.3600, ext. 2687

NAWQA Program

http://wa.water.usgs.gov/ps.nawqa.html - The Puget Sound basin is one of the study units under the National Water Quality (NAWQA) Program. This program assesses water quality and stream habitat at both the regional and national scale. A wide range of water-quality and habitat data are collected at various scales, and the data coupled with land use and land cover data to identify processes affecting water quality and habitat conditions. Some of the specific studies address pesticide fate and transport, nutrient loading to Puget Sound, land-use impacts on habitat, and pesticide concentrations in fish tissue. Contact: Jim Ebbert, jcebbert@usgs.gov, 253.428.3600, ext. 2682

Oregon Temperature Model

The USGS Oregon District has developed a temperature model to estimate natural, or background, water temperatures in small western Oregon streams. This modeling approach could also be applied to Puget Sound streams. Contact: Stewart Rounds, sarounds@usgs.gov, 503.251.3280

Pesticide concentrations in Puget Sound Basin streams

http://wa.water.usgs.gov/pugt/fs.097-99/index.html - Collaboration among the USGS, the Washington State Department of Ecology, and King County to study and compare types of pesticides found in urban stream water with pesticide sales information from large home and garden stores. Done to provide some insight about sources of pesticides found in urban streams.

Salmon Atlas

The USGS is developing a prototype of a Salmon Atlas containing information of the Western U.S. available from the USGS and other organizations. The Salmon Atlas will be available on a CD-ROM, with some modest data search and overlay capability. Contact: Alexander Evans, USGS Western Mapping Center, Menlo Park, California, 650.329.4272, aevans@usgs.gov

Science Information System

http://biology.usgs.gov/science/currproj.html - an automated query to provide rapid access to projects of the Biological Resources Division.

Stream and riparian ecology software

http://www.mesc.usgs.gov/rsm/rsm_software.html - software related to solving instream flow-related problems.

Streamflow data

http://wa.water.usgs.gov/current.html (current) http://wa.water.usgs.gov/historical.html (historical) - Current and historic data on streamflow volume and stage are available for most rivers and streams in the Puget Sound Basin. Such data may be as frequent as every 15 minutes, and are usually summarized as hourly or daily data for long periods of record, some spanning several decades. Real-time data are collected

for many sites using satellite telemetry. Contact: Bill Wiggins, wwiggins@usgs.gov, 253.428.3600, ext. 2664

Streamflow statistics

Several studies have analyzed the WRDs extensive streamflow database to identify various streamflow statistics of interest. Examples of such studies are the development of equations to predict flood frequencies and flows for ungaged streams and the identification of points on streams below which a specific mean annual discharge is exceeded. Not only are these particular study results available in reports, but the techniques used to develop these statistics can be applied (or modified to be applied) to define other streamflow statistics specific to salmon restoration. Contact: Dave Kresch, dlkresch@usgs.gov, 253.428.3600, ext. 2611

Temperature data for Puget Sound Basin streams

http://wa.water.usgs.gov/pugt/psbmap.html - Stream temperature data are being compiled as part of the Puget Sound National Water-Quality Assessment Program.

Water Quality Data, NASQAN Program

Much current and historical water quality data are available, for both surface and ground water in the Puget Sound basin. Concentrations for many constituents have been determined, including common ions, metals, pesticides, and volatile organic compounds. Of particular note is the National Stream Quality Accounting Network (NASQAN), under which water chemistry was historically monitored for several major rivers in the Puget Sound basin. Contact: Rick Wagner, rjwagner@usgs.gov, 253.428.3600, ext. 2685

WARSMP watershed model

http://wa.water.usgs.gov/warsmp/warsmp.html - Under the joint USGS and Bureau of Reclamation Watershed and River System Management Program (WARSMP) the USGS has developed a modular modeling system (MMS) capable of modeling and predicting streamflow patterns based on current climatic and streamflow conditions. A model has been built for the Yakima River basin, but the MMS can be applied to other basins in the Puget Sound. Contact: John Vaccaro, jvaccaro@usgs.gov, 253.428.3600, ext. 2620

Water systems modeling software

http://water.usgs.gov/software - The USGS has developed and maintains a multitude of software and programs for modeling various water systems including surface water, ground water, water quality, and geochemistry. Contact: Gary Turney glturney@usgs.gov, 253.428.3600, ext.2626

Mandate/sponsor: USGS develops, maintains, and distributes earth science information under its organic act, subsequent legislation, and its appropriations.

Whatcom County Planning and Development Services Geographic Information Systems Division (GIS)

Web address: http://www.co.whatcom.wa.us/planning/gisdata/gisdata.htm

Host: Whatcom County Planning and Development Services

Geographic area: Whatcom County, Washington

Timeframe of data: Varies

Data categories: Metadata for alluvial fans, communication towers, fire districts, fire stations, FEMA floodplain, fish habitat, gas and oil, geology, geohazards, mine hazards, NRCS soils, parcels, schools, school districts, shorelines, watersheds, volcanic hazards, zoning and comprehensive plan, wetlands and buffers, NWI wetlands, wildlife habitat

Contact: Whatcom County Planning and Development Services – GIS, Northwest Annex, 5280 Northwest Drive, Bellingham, WA 98226-9099, 360.676.6907; swatts@co.whatcom.wa.us

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Washington Department of Ecology

Web address: http://www.wa.gov/ecology/

Resources (selected):

Ecology environmental monitoring reports

http://www.wa.gov/ecology/eils/index.html - A wide variety of reports, and links to others' sites, on persistent, bioaccumulative, and toxic chemicals (PBTs); watersheds; estuaries; groundwater; waste; air; and the environmental assessment bibliography.

Geographic information systems

http://www.wa.gov/ecology/gis/index.html - Data online include water quality monitoring stations, Washington's counties, dairy farms, dams, Environmental Information Monitoring stations, facility sites, groundwater management areas, lakes, bathymetric contours of selected freshwater lakes, rivers, State tribal lands, Water Resource Inventory Areas (WRIA), and public drinking water wells.

Shorelands and wetlands

http://www.wa.gov/ecology/sea/shorelan.html – Information on regulation, permits, restoration, and stewardship.

Watershed planning

http://www.wa.gov/ecology/watershed/ - Descriptions of local watershed planning efforts, including links to other agencies' water resource data.

Mandate/sponsor: The mission of the Department of Ecology is to protect, preserve and enhance Washington's environment, and promote the wise management of our air, land and water for the benefit of current and future generations. Its goals are to prevent pollution, clean up pollution, support sustainable communities and natural resources. Strategic initiatives are to meet current and future water needs of people, farms, and fish; develop a comprehensive approach to watershed management that covers water quantity, quality, and habitat, and increase efforts to solve pollution problems from small but numerous sources.

Contact: Department of Ecology, 300 Desmond Drive, P.O. Box 47600, Olympia, Washington 98504

Washington Department of Fish and Wildlife

Web address: http://www.wa.gov/wdfw/

Resources (selected):

County road culvert inventory

In progress. Covers counties in Washington State. Contact: Larry Cowan, 360.705.3557.

Fish and shellfish science

http://www.wa.gov/wdfw/fish-sh.htm

Maps and digital information

http://www.wa.gov/wdfw/hab/release.htm - The department maintains a number of GIS databases that contain information on important fish and wildlife species.

Salmon and Steelhead Stocks Identification (SASSI)

Washington Gap Analysis Program

http://www.wa.gov/wdfw/wlm/gap/dataprod.htm - Data about land cover and vertebrate distributions

Washington Recovery Inventory Project

http://www.wa.gov/wdfw/hab/wrip/wrip.htm - Created to develop a comprehensive inventory of watershed restoration projects and watershed information needed to respond effectively to the challenges and opportunities presented by the potential salmonid listings under the Endangered Species Act (ESA). A two-year old list of 270 related databases is at http://www.wa.gov/wdfw/hab/wrip/appendi.htm.

Mandate/sponsor: The Department of Fish and Wildlife provides sound stewardship of fish and wildlife.

Contact: Washington Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091

Washington Department of Natural Resources

Web address: http://www.wa.gov/dnr/

Resources (selected):

Division of Geology and Earth Resources

http://www.wa.gov/dnr/htdocs/ger/ger.html - Information about the geology and mineral resources of Washington.

Status and trends on Puget Sound's nearshore habitats

http://www.wa.gov/dnr/htdocs/aqr/nshr/

Washington cadastral framework

http://framework.dnr.state.wa.us/fw/cadastre/ - effort to identify commonly needed and maintained cadastral data, implement a framework cadastral database, and share cadastral data among federal, state, local, and private organizations throughout the state.

Washington Natural Heritage Program

http://www.wa.gov/dnr/htdocs/fr/nhp/wanhp.html - Collects data about existing native ecosystems and species to provide an objective, scientific basis from which to determine protection needs. Develops and recommends strategies for protection of the native ecosystems and species most threatened in Washington.

Mandate/sponsor: The Department of Natural Resources protects, manages, and sells products from more than 5 million acres of land (forests, farms, commercial properties and underwater lands). Underwater lands are managed to provide access to the waters of the state (rivers, lakes, streams and Puget Sound), and to serve the continuation of navigation and commerce. It also protects other public resources (fish, wildlife, water, etc.); prevents and suppresses fires, and regulates forest practices (or timber harvest).

Contact: Washington Department of Natural Resources, 1111 Washington Street SE, PO Box 47000, Olympia, Washington 98504-7000

Washington Department of Transportation

Web address: http://www.wsdot.wa.gov/

Resources (selected):

GeoDataCatalog

http://www.wsdot.wa.gov/gis/GeoDataCatalog/ - (major headings) transportation, political and administrative boundaries, geographic reference, and environmental (fish and wildlife, plants, soils, groundwater and wells, hydrography, water quality, air quality, hazardous materials)

Monument Database

http://www.wsdot.wa.gov/monument/ - a set of entities and attributes as referenced to individual geographic locations, hereafter referred to as "Point". Each individual Point has a location relative to all other points in the database as referenced to a coordinate grid. The relative locations of the points as represented in this database correspond to the physical or determined locations of Survey Control Monumentation.

Salmon page

http://www.wsdot.wa.gov/eesc/environmental/salmonids.htm – Endangered Species Act Listing distribution maps.

Transportation Data Office

http://www.wsdot.wa.gov/ppsc/TDO/tdo_hp.htm - Collects, processes, analyzes, and disseminates transportation data pertaining to the Washington State highway system.

Plans for new data or applications: Data projects being conducted by the Environmental Affairs Office within WSDOT are described at: http://www.wsdot.wa.gov/eesc/environmental/example_frame.htm

Mandate/sponsor: Generally, to build, maintain, operate, and promote safe and coordinated transportation systems to serve our public. See metadata for specifics about individual data sets.

Contact: Elizabeth Lanzer, Environmental Information Manager, WSDOT / Environmental Affairs Office, 360.705.7476, lanzere@wsdot.wa.gov

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Washington Gap Analysis home page

Web address: http://salmo.cqs.washington.edu/~wagap/

Host: Washington Cooperative Fish and Wildlife Research Unit, University of Washington

Geographic area: Statewide

Data categories: Land cover, and distribution of birds, mammals, reptiles, and amphibians

Mandate/sponsor: Determine critical habitat before it becomes 'critical', and before its fauna becomes endangered. The project is funded by the United States Geological Survey, through the Washington Cooperative Fish and Wildlife Research Unit at the University of Washington.

Contact: Washington Cooperative Fish and Wildlife Research Unit, University of Washington Box 357980, Seattle, Washington 98195; 206.543.6475; kelly@u.washington.edu

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Washington State Geospatial Data Archive

Web address: http://wagda.lib.washington.edu/

Host: University of Washington, Libraries' Map Collection and Cartographic Information Services

Geographic area: State of Washington; data for Washington counties, and selected non-Washington geospatial data sets that have been created by students and researchers at the University of Washington.

Timeframe of data: Varies

Data categories: Varies

Mandate/sponsor: "Your One Stop Source for GIS Coverages for the Pacific Northwest." Maintained by the University of Washington Map Collection Library

Contact: For comments or questions about the site, or for problems with downloading or data transferability between applications, contact gis@lib.washington.edu. For other purposes: Jenny Stone, University of Washington Libraries, GIS Librarian - Map Collection, Box 352900-2900, Seattle, Washington 98195, 206.543.9392, jnstone@u.washington.edu

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Washington State Spatial Information Clearinghouse Node

Web address: http://metadata.gis.washington.edu/

Host: Washington State Geographic Information Council (WAGIC), University of Washington Libraries, and the Washington Department of Information Services

Geographic area: Generally Washington State, but includes metadata contributions by various cities, counties, and state government agencies.

Timeframe of data: Varies

Data categories: Metadata for a large number of data themes. Approximately 450 spatial data descriptions (metadata) and in some instances links to underlying data.

Status of the resource: Complete infrastructure; continue to build information content of clearinghouse.

Plans for new data or applications: WAGIC and partners continue to work on building information content through outreach, training (metadata creation workshops) and other grant related activities. With increased emphasis on persuading metadata contributors to provide embedded link to (underlying) data download.

Mandate/sponsor: Responds to the need for a state based spatial data discovery mechanism. Provided through WAGIC and Clearinghouse Partnership with support of Federal Geographic Data Committee cooperative agreement grant programs.

Contact: Jeff Holm, WAGIC Coordinator, 360.902.3447, jeffh@dis.wa.gov

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Watershed Stewardship Enhancement Program (WSEP)

Web address: http://seagrant.orst.edu/

Host: Oregon Sea Grant

Data categories: watershed stewardship training programs

Mandate/sponsor: Sea Grant

Contact: Pat Corcoran, 541.737.1421, Patrick.Corcoran@orst.edu

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[untitled items]

- Host: Oregon State University

  Resource: Fisheries oceanography data, 1960-1995 [PC, 5.25" floppies and tape].

  Mandate/sponsor: Oregon Sea Grant and other federal funds

  Contact: William Pearcy, Oceanography, 541.737.2601, Wpearcy@oce.orst.edu or Mark Hixon, Zoology, 541.737.5364, hixonm@bcc.orst.edu

- Host: Oregon Department of Fish and Wildlife

  Resource: Juvenile survival in restored estuarine wetlands, 1998-? (project in progress) [MS ACCESS (PC)]

  Mandate/sponsor: Oregon Sea Grant and Oregon Department of Fish and Wildlife

  Contact: Kim Jones, 541.757.4263 ext 260

- Host: Oregon State University (OSU)

  Resource: Information on salmon in the Pacific basin, to be put into an atlas and on the web (in progress)

  Mandate/sponsor: Oregon Sea Grant funds, foundations

  Contact: Stan Gregory, OSU Department Fisheries and Wildlife, 541.737-1951, Stanley.gregory@orst.edu

- Host: Oregon Sea Grant communications

  Resource: "The Northwest Salmon Crisis – A Documentary History" (books)

  Mandate/sponsor: The Oregon University Press

  Contact: Joe Cone, 541.737.0756, Joe.cone@orst.edu

- Host: Oregon Sea Grant Communications

  Resource: "Restoration" - quarterly newsletter about salmon habitat and ecosystem restoration, guest contributors; http://Seagrant.orst.edu

  Status of the resource: continuing

  Mandate/Sponsor: Oregon Sea Grant funds

  Contact: Joe Cone, 541.737.0756, Joe.cone@orst.edu

- Host: Oregon Division of State Lands

  Resource: Published maps showing streams designated as essential salmonid habitat under the Oregon Removal-Fill Law [PDF format]; http://Statelands.dsl.state.or.us/esshabitat.html

- Host: Oregon Watershed Enhancement Board

  Resource: Salmon restoration projects [MS ACCESS (PC)]

  Contact: Suzanne Maliki, 541.757.4263 ext. 233

- Host: Oregon Department of Fish and Wildlife

  Resource: Aquatic inventory project [MS ACCESS (PC)]

Contact: Kim Jones, 541.757.4263 ext 260 or Steve Jacobs, 541.757.4263 ext 261

- Host: Oregon Department of Fish and Wildlife

  Resource: Lawson/Nickelson models - Juvenile salmon populations, habitat, population dynamics, & viability, mostly Oregon; Stock recruitment

  Contact: Tom Nickleson, 541.7574263 ext 223

- Host: U.S. Forest Service and Bureau of Land Management

  Resource: Aquatic riparian effectiveness monitoring plan (draft) [Fuzzy logic]

  Contact Dave Busch, dave_busch@or.blm.gov

Appendix A. Invitation to Provide Information

October 4, 1999

Dear colleague:

At our September 14 meeting 'Exploration of Alternative Approaches to Pacific Salmon Recovery Information Sharing,' Larry Sugarbaker and I agreed to develop a template for an inventory of available information resources relevant to pacific salmon recovery. This note seeks your help in beginning to compile the inventory. We are sending the request to persons invited to the meeting.

Below is a list of six questions for which we are soliciting information (for the purpose of this effort, we are seeking responses about information systems, models, data collections, or other sets of organized information that can help address salmon recovery):

1. What information systems or applications does your organization support that create or capture data that might be useful to salmon recovery efforts? (Please provide a list that includes each application's full name, acronyms by which they are known, and web address(es) at which additional information may be found.)

2. For each system or application that your organization maintains, please provide:

    - The geographic areas the resource covers. (eg. 'City of Seattle', 'Puget Sound')
    - The time frames the resource covers. (eg. '1990-current')
    - The themes or categories of data the resource includes.
    - The status of the resource. (eg. 'planned', 'under construction', 'complete')

3. Does your organization plan to develop new applications or data sets which may be helpful to salmon recovery efforts? Please briefly describe each application or data set, and planned completion dates.

4. What is the mandate, authority, or need for which the resources/inventories/systems were developed? (What needs do the resources meet?)

5. Who is the contact for more information about the resource? (This should be someone who could receive and direct inquiries to the appropriate individual. Please provide a name and/or title, telephone number, and electronic mail address.)

6. What other information do decision makers need that is not provided by the resource?

I invite you to respond with a description of your information resources. To ease the burden on you, please feel free to provide copies of existing materials (or addresses of web sites) that provide the information requested. We will compile the information in a common format, and provide the results to you for review. If you would prefer to answer the questions directly, please do so.

Please provide your response to Michael Domaratz of my staff by electronic mail at michael_domaratz@os.doi.gov, or by facsimile at 202.208.3324. If you have questions about the request, please call Mike at 202.208.4457. We would appreciate receiving your response by Friday, October 15.

The compilation will be provided to September meeting invitees and others. We also plan to use the responses to develop the agenda for the next meeting.

Thank you in advance for your participation.

Sincerely,

/s/

Mark Schaefer, U.S. Department of the Interior

Appendix B. Views about other information needed by decision makers

[Answers received to question 6 in Appendix A. Invitation to Provide Information]

Jeff Richey, University of Washington: The political trade-offs.

Tom Van Buren, Seattle Public Utilities: Regional anadromous fish habitat data. Land use and land cover change. Satellite imagery. Change detection analysis.

Jeff Holm, Washington Geographic Information Council coordinator: The information content of the Washington State Spatial Information Clearinghouse at this stage of development is essentially descriptions of data sets. **Decision makers need access to underlying data.** Many of the datasets have direct or indirect applicability to the ESA/Salmon Recovery.

Information provided by the National Oceanic and Atmospheric Administration:

Data System Name and Acronym	Information Needs	Contact name, email address, phone number
Coho and Chinook Salmon Fitness in the Estuarine Environment	Additional spatial data about environmental condition, historic salmon counts	Mary Arkoosh Mary.arkoosh@noaa.gov 541.867.0327 Beth Horness Beth.horness@noaa.gov 206.860.3311
ALSEA Project Oregon Coastal Watershed	Need better GIS coverages including road densities, landcover, hydro, 10-meter digital elevation models, flow and habitat data, ppt., ocean and environmental changes, salmon ocean survival rates.	Pete Lawson Peter.lawson@noaa.gov 541.867.0430 Mindy Rowse, Mindy@rowse.noaa.gov 206.860.6783
Thermal Regimes and Chinook Holding Habitat	Could use more of temperature, fish count, and habitat data for the upper reach of the Stillaguamish	George Pess George.pess@noaa.gov 206.860.3450
Fine Sediment Intrusion and Scour Study, North Puget Sound	Would like more stream flow data	George Pess George.pess@noaa.gov 206.860.3450
Flow Level Relationship to Chinook Egg/Fry Survival in North Puget Sound	Better digital land use info and more flow data	George Pess George.pess@noaa.gov 206.860.3450
Freshwater Habitat and Fish Populations	More fish data for adults for all species, 10 meter digital elevation models for Idaho, LIDAR	George Pess George.pess@noaa.gov 206.860.3450 Blake Feist Blake.feist@noaa.gov 206.860.3408
Baseline Environmental Monitoring Program	Continue monitoring, add streams, integrate climatic data	Brad Eppard Brad.Eppard@noaa.gov 509.547.7518
Radio telemetry research studies	Continued research	Brad Eppard Brad.Eppard@noaa.gov 509.547.7518
Smith River, California, Estuary salmon habitat studies	Improved mark/recapture techniques; continued long-term studies	Tim Mulligan Tjm2@axe.humboldt.edu 707.826.3684
Couple Biophysical models for the Gulf of Alaska	Improve model integration and add more data	Dr. Al Hermann Hermann@pmel.noaa.gov 206.526.6495